Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Title V Permit No. V-03-009 R2, Minor Revision
Jim Beam Brands Co.– Booker Noe Distillery
Boston, KY
August 25, 2005
Herbert Campbell, Reviewer

Source I.D. #	21-179-00014
Source A.I. #	3261
Activity I.D. #	APE20050001

CURRENT PERMITTING ACTION: Source Description For Minor Revision To Existing Title V Permit:

Jim Beam Brands Co. has applied to the Kentucky Division for Air Quality for a minor revision on the Title V permit for its Booker Noe Distillery located in Boston in Nelson County, Kentucky. The source is voluntarily installing a baghouse, associated lime injection system and new ash handling system for the existing coal-fired boiler emission unit 09. The minor revision to the existing permit includes the installation of a baghouse, associated lime injection system and new ash handling system on the existing coal-fired boiler. The baghouse and the lime injection system will treat pollutants contained in the exhaust gas from the boiler. Lime is injected into the exhaust air upstream of the baghouse in order to treat hydrochloric acid (HCl) in the flue gas.The baghouse, lime injection system and stack installation will replace the existing cyclones, exhaust fan and stack and will not result in an increase in emissions. The ash handling system which will reduce fugitive emissions of particulate matter (PM) relative to the current ash handling process, will result in estimated potential PM emissions of 1.5 tons per year (tpy) and qualifies as an insignificant activity per 401 KAR 52:020, Section 6.

Regulation Applicability:

Pursuant to 401 KAR 52:020 Section 6, the new ash handling system insignificant activity per, and is subject to 401 KAR 59:010, New Process Operations. This includes a standard for both particulate matter (PM) and opacity (401 KAR 59:010, Section 3). The allowable emission rate for PM is 2.34 lb/hr, on a three hour average and opacity equal to or less than twenty (20) percent. The baghouse does not have an applicable regulation however, there are monitoring, recordkeeping and reporting requirements listed below.

Monitoring, Record Keeping and Reporting Requirements:

In addition to the existing permitted requirements, the source shall install, calibrate, maintain and operate according manufacturer's specification a monitoring device for the continuous measurement of the pressure drop across the baghouse. The permittee shall perform weekly inspection of the baghouse to ensure that there are no broken/torn bags. The permittee shall record the pressure drops across the baghouse on a daily basis

PAST PERMITTING ACTION: REVISED SOURCE WIDE PERMIT --V-03-009 R1

The source is a distillery that makes distilled spirits. Grain is unloaded and conveyed to mills where it is ground. The grain is fed into mash cookers along with water, and the grain starches are converted to sugars by heating. The cooked grain/water mixture is fed into fermenter vessels as a batch operation to convert the sugars to ethanol. After an appropriate residence time, the mixture is processed through distillation columns and condensers. The condensed liquid is fed to spirits tanks and then gauged at the cistern tanks prior to barrel filling. The spent stillage is then dried with a dryer and put into a storage room. Whiskey from the cistern tanks is put into barrels until the appropriate age is reached. The barrels are then gravity dumped, rolled, and rinsed at the dumping station. After dumping, the whiskey is fed to the regauge tanks, where it may be processed and sent to be loaded for shipment.

E. Unit 01: Grain handling Operations: grain unloading/receiving hopper, conveyors with baghouse and unpaved roads

E. Unit 02 Fermentation process

E. Unit 03 Spent stillage: spent stillage tanks, centrifuges, and evaporators

E. Unit 04 Spent grain drying: dryer and cyclone

E. Unit 05 Distiller's dried grain cyclones: silos and process cyclones

E. Unit 06 Barrel filling, aging, dumping: barrel filling stations, product aging in warehouse, and barrel dumping

E. Unit 07 Horizontally-opposed-#6-oil-fired indirect-heat-exchanger

E. Unit 08 Horizontally-opposed-#6-oil-fired indirect-heat-exchanger

E. Unit 09 Spreader stoker coal-fired indirect-heat-exchanger

The Distillery is proposing a significant revision to their Title V permit No. V-03-009. The projected emissions increases from the modification would exceed Prevention of Significant Deterioration (PSD) regulations. However, they propose to accept an operating limitation in order to "cap-out" of PSD requirements. The following modifications are proposed.

Emission Unit	KY EIS ID	Emission Unit Description	Process Modification
03	03-001	Spent Stillage: tanks, certrifuges, evaporators	Relocate centrifuges & tanks to new dryhouse. Install larger evaporator.
04	03-003	Spent grain drying	Replace existing Aerator Cyclone with Distiller's Dried Grains (DDGS) Product Cyclone with baghouse

05	03-004	Distiller's Dried Grains (DDGS) Silos & Process Cyclones	Construct 2 silos with cyclones and common baghouse. Relocate 1 silo and cyclone. Remove 2 existing silos.
05	03-005	DDGS Loading	Replace existing DDGS loading equipment with new (conveyors, etc.)
06	04-002	Barrel Aging	Remove existing Warehouse N. Construct 4 new warehouses over next 2 years. Warehouse X,Y & Z - 2004 Warehouse AA - 2005Warehouse AA - 2005
07 (2)	005-01	Fuel Storage	Remove existing #6 Fuel Oil tank. Use existing Propane tanks as back Up fuel source.
07	005-02	Indirect heat exchanger	Remove existing #6 Fuel Oil boilers (2). Install (1) new natural gas indirect heat exchanger.
08	005-03	Indirect heat exchanger	Remove existing #6 Fuel Oil boilers (2). KY EIS 005-03 eliminated.

The net emissions increases from the process modifications are shown in Table A-1 for each criteria pollutant. Based on this analysis (Projected Potential-to-Emit minus Baseline Actual Emissions), PSD emission increase thresholds are exceeded for volatile organic compounds (VOC), carbon monoxides (CO) & nitrogen oxides (NOx). Note that the increases are prior to imposing requested operating limitation.

Table A-1 PSD Net Emission increase Thresholds (tons per year)

		VOC	CO	NOx	SO2	PM	PM10
Emission Unit 03	Tons/ yr	58.86	0.0	0.0	0.0	0.0	0.0
Emission Unit 04	Tons/ yr	43.64	33.07	2.69	.07	10.21	10.21
Emission Unit 05	Tons/ yr	0.0	0.0	0.0	0.0	6.27	1.42
Emission Unit 07/08	Tons/ yr	2.15	35.03	81.69	.04	2.81	2.81
Total	Tons/ yr	104.65	68.09	84.38	.12	19.29	14.44

In order to avoid triggering PSD thresholds for the above listed criteria pollutants, Jim Beam is requesting an operating limitation. Based on the emissions inventory analysis, VOC and NOx are the first pollutants that trigger PSD thresholds. Therefore, operating limitations will be imposed that limit these emissions.

VOC

VOC emissions for the purpose of this application are based on corn usage (for Emission Units 03 & 04) and fuel usage (for Emission Unit 08). Therefore, the usage of these materials on an annual basis will be limited so that the entire net emissions increase for VOC as a result of the process modification will be limited to 35 tons per year. An equation to calculate the VOC emissions from the affected emission units on a twelve-month rolling total has been established. Equation 1 below shows the calculation procedure. Monitoring and recordkeeping methods are specified also.

{Emission Unit 03 }{Emission Unit 04}

VOC Emissions (tpy) = (VOC EF*) x (Bushels Processed) + (VOC EF*) x (Bushels Processed) +

{Emission Unit 08}

(VOC EF) x (Natural Gas Usage) + (VOC EF) x (Propane Usage) **(EQ-1)**

Where 'EF*' is the emission factor for the activity, derived by Jim Beam Brands and 'EF' is the emission factor from AP-42.

NOx

NOx emissions are based on fuel usage (for Emission Units 04 & 08). Therefore, the fuel usage on an annual basis will be limited so that the entire net emissions increase for NOx as a result of the process modifications will be limited to 35 tons per year. An equation to estimate the NOx emissions from the affected units on a twelve-month rolling average has been established. Equation EQ-2 below shows the calculation procedure. Monitoring and recordkeeping methods are specified also.

{Emission Unit 04}

NOx Emissions (tpy) = (NOx EF*) x (Natural Gas Usage) + (NOx EF) x (Natural Gas Usage) + Unit 08}

(NOx EF) x (Propane Usage) **(EQ-2)**

Where 'EF*' is the emission factor for the activity, guaranteed by the Manufacturer and 'EF' is the emission factor from AP-42.
(These units were renumbered in accordance with the permittee's request.)
Unit 3 is Emission point 03-001 Spent Stillage
Unit 4 is Emission point 04-001 Spent Grain Drying
Unit 8 is Emission point 08-002 Indirect Heat Exchanger (88.85 mmBtu/hr N.G./Propane)

CONDITIONS PERTAINING TO THE NON-APPLICABILITY OF PSD:

According to 401 KAR 51:017, Prevention of Significant Deterioration (PSD), a "major stationary source" is any source type belonging to a list of source categories which emits or has the potential to emit 100 tons per year or more of any pollutant subject to regulation under the Clean Air Act, or any other source type which emits or has the potential to emit such pollutants in amounts equal to or greater than 250 tons per year. Fugitive VOC emissions are not included in Jim Beam Brands Potential to Emit for PSD purposes, since PSD regulation excludes fugitive emissions from determining potential emissions at sources not included in the list of 100 ton source categories. Therefore, Emission Unit 06 (Warehousing) will not be considered in order to avoid applicability of 401 KAR 51:017, PSD whereby the permittee has requested an operating cap for the significant revision to their Title V operating permit.

EMISSION AND OPERATING CAPS DESCRIPTION:

This source is requesting that these production processes affected by this modification be limited for VOC and for NOx emissions to 35 tons each in any 12 month rolling total in order to ensure the non-applicability of 401 KAR 51:017 (PSD). The facility's remaining production processes in the Title V permit are not changing. Potential to emit calculations were based on 8760 hours of operation per year. The source will also demonstrate sulfur content of fuel by requiring vendor certification.

APPLICABLE REGULATIONS:

401 KAR 59:010, New Process operations, applicable to an emission unit that commenced on or after July 2, 1975.

401 KAR 59:015, New Indirect Heat Exchanger, applicable to an emission unit with a capacity of 250 mmBtu/hr input or less that commenced on or after April 9, 1972.

401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, Standards of Performance for small industrial-commercial-institutional steam generating units, applies to each steam generating unit commenced after June 9, 1989 that has a maximum design heat input capacity between 10mmBtu/hr and 100mmBtu/hr.

401 KAR 63:010, Fugitive emissions.

PUBLIC AND U.S. EPA REVIEW:

On October 3, 2004, the public notice on availability of the draft permit and supporting material for comments by persons affected by the plant was published in The Bardstown Standard in Bardstown, Kentucky. The public comment period expired 30 days from the date of publication. No comments were received during this period. The permit is now being issued as a proposed permit. The U.S. EPA has 45 days from the date of the issuance to submit comments. If no comments are received during this period, the Division consider the permit final as conditioned.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has not incorporated these provisions in its air quality regulations.